

Applications for Investor-Owned Utility Programs Proposed Under AB 1082 and 1083

Energy Division Discussion Paper

December 6, 2018

Contents

1. Introduction	3
1.1. Purpose.....	3
1.2. Procedural Background on AB 1082 and AB 1083 Applications.....	3
1.3. Overview of Liberty, SCE, SDG&E and PG&E Applications.....	6
2. Discussion of Proposed Pilot Projects.....	10
1. Questions for All Utilities.....	13
2. PG&E <i>EV Schools</i> Pilot Program Proposal (\$5.76 million).....	15
3. PG&E <i>EV Parks</i> Pilot Program Proposal (\$5.54 million)	17
4. SCE AB 1082 Pilot Program Proposal (\$9.89 million)	18
5. SCE AB 1083 Pilot Program Proposal (\$9.88 million)	20
6. SDG&E Schools Pilot Program Proposal (\$9.88 million).....	21
7. SDG&E Parks Pilot Program Proposal (\$9.88 million).....	22
8. Liberty Utilities AB 1082 Pilot Program Proposal (\$3.86 million)	23
9. Liberty Utilities AB 1083 Pilot Program Proposal (\$0.74 million)	24

1. Introduction

1.1.Purpose

California Public Utilities Commission (CPUC) Energy Division staff presents this discussion paper to serve as a reference during the December 6, 2018 workshop being held to review the investor-owned utility applications for transportation electrification infrastructure programs at schools and parks proposed under Assembly Bill (AB) 1082 and AB 1083. This document is intended to (1) organize and summarize the utility proposals by topic area to provide a reference document for discussion and (2) identify topics of discussion for the workshop to help stakeholders prepare their comments.

Each subsection of this document outlines issues for parties to consider and provide additional feedback on during and after the workshop. Parties can use the workshop discussion to help develop their written briefs that they will submit after the workshop.

Note: This document is not meant to identify all possible topics for party input on all 8 pilot projects. The written comments will be the venue for a fuller discussion. In developing the discussion questions presented in this document, Energy Division staff attempted to identify some of the major party concerns that we thought should be best addressed through a discussion format.

1.2.Procedural Background on AB 1082 and AB 1083 Applications

Assembly Bills (AB) 1082 (Statutes of 2017, Chapter 637) and AB 1083 (Statutes of 2017, Chapter 638) authorized the electric utilities to file applications for pilot programs to install electric vehicle charging stations at school facilities and other educational institutions (AB 1082) and at state parks and beaches (AB 1083), with priority given to schools and parks located in disadvantaged communities (DAC)¹. The legislation directed the utilities to file any applications for programs no later than July 30, 2018 and ordered the Commission to issue a decision on the applications by December 31, 2018, in an expedited five-month review process. Under existing law², the Commission is directed to

¹ A Disadvantaged Community is an area in California which suffers from a combination of economic, health, and environmental burdens. These burdens include poverty, high unemployment, health conditions like asthma and heart disease, as well as air and water pollution, and hazardous waste. More information on DACs can be found at <http://www.cpuc.ca.gov/discom/>.

² Public Utilities Code §740.12.

approve, or modify and approve, those programs and investments that accelerate widespread transportation electrification,³ do not unfairly compete with nonutility enterprises, include performance accountability measures, and are in the interest of ratepayers.

The interest of ratepayers is defined as follows:⁴

- direct benefits that are specific to ratepayers, consistent with both of the following:
 - (a) Safer, more reliable, or less costly gas or electrical service, consistent with Section 451, including electrical service that is safer, more reliable, or less costly due to either improved use of the electric system or improved integration of renewable energy generation.
 - (b) Any one of the following:
 - (1) Improvement in energy efficiency of travel.
 - (2) Reduction of health and environmental impacts from air pollution.
 - (3) Reduction of greenhouse gas emissions related to electricity and natural gas production and use.
 - (4) Increased use of alternative fuels.
 - (5) Creating high-quality jobs or other economic benefits, including in disadvantaged communities identified pursuant to Section 39711 of the Health and Safety Code.

On January 24, 2018 the Assigned Commissioner issued a Ruling (ACR) in Rulemaking (R.) 13-11-007⁵, authorizing, but not requiring the six investor-owned utilities in California to file applications to support the installation of electric vehicle charging stations at school facilities and other educational facilities (AB 1082) and state parks and beaches (AB 1083), and providing guidance on what should be included in the applications. Among other things, the ACR directed the utilities to consult with the California Department of Parks and

³ Public Utilities Code Section 237.5 defines “transportation electrification” as “the use of electricity from external sources of electrical power, including the electrical grid, for all or part of vehicles, vessels, trains, boats, or other equipment that are mobile sources of air pollution and greenhouse gases and the related programs and charging and propulsion infrastructure investments to enable and encourage this use of electricity.”

⁴ California Public Utilities Code Section 740.8.

⁵ The Assigned Commissioner’s Ruling is available at <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M206/K663/206663987.PDF>.

Recreation and develop pilot programs that cost no more than \$10 million and have a duration of no more than two years.

On July 30, 2018 four investor-owned utilities (Pacific Gas and Electric Company (PG&E); Southern California Edison Company (SCE); San Diego Gas & Electric Company (SDG&E); and Liberty Utilities (Liberty)), filed separate applications⁶, requesting authorization and approval for pilot programs to install electric vehicle charging stations at school facilities, state parks and beaches, and associated marketing, education, and outreach (ME&O).

The assigned Administrative Law Judge will issue a Scoping Memo in mid-December identifying the scope and schedule for the Commission's consideration of PG&E's, SCE's, SDG&E's, and Liberty's applications. The Scoping Memo will order that the four utility proceedings be consolidated. The Scoping Memo will identify the following steps to review the proposed pilot projects.

Table 1. Timeline for Pilot Program Proposals

Scoping Memo and Ruling issued.	Mid-December 2018
Workshop	December 6, 2018
Discovery Issues Deadline	December 14, 2018
Common Comment Outline Circulated	December 17, 2018
Concurrent Opening Comments	<i>To be determined at Workshop</i>
Concurrent Reply Comments	<i>To be determined at Workshop</i>
Proposed decision	First Quarter 2019
Comments on proposed decision	As permitted by Rule 14.3
Commission adoption of decision	Second Quarter 2019

⁶ Pacific Gas and Electric (PG&E) filed Application 18-07-020; Southern California Edison (SCE) filed Application 18-07-022; San Diego Gas & Electric (SDG&E) filed Application 18-07-023; and Liberty Utilities filed Application 18-07-025.

Additional information about Assemble Bill 1082 and 1083 and links to the utilities' applications can be found on the Commission website: www.cpuc.ca.gov/zev.

1.3. Overview of PG&E, SCE, SDG&E and Liberty's Applications

PG&E, SCE, SDG&E, and Liberty each filed an application with the CPUC to request approval of their AB 1082 and AB 1083 pilot program proposals. In total, the utilities requested approximately \$55.47 million in funding to implement these proposals over two to five years.

PG&E (A.18-07-020)

PG&E has requested a total of \$11.3 million, \$5.76 million for its AB 1082 pilot (*EV Charge Schools*) and \$5.54 million for its AB 1083 pilot (*EV Charge Parks*), over the five-year deployment and ongoing program maintenance.

Through *EV Charge Schools*, PG&E expects to install 88-132 level 2 (L2)⁷ EV charge ports across 22 school campuses within Alameda, Fresno, and San Joaquin counties. The participating schools are provided the option to determine if school employees, school fleets, students and/or visitors can use the chargers. At least 35 percent of the schools selected to participate in the pilot will be located in a DAC, and no more than 10 percent will be installed at institutes of higher education. The utility will also partner with the selected schools to organize a ME&O campaign that seeks to educate future drivers on the benefits to EV ownership and improve awareness of EV charging availability.

Through *EV Charge Parks*, PG&E expects to install at least 40 L2 ports and three direct current fast chargers (DCFC)⁸ EV chargers across 15 state parks and beaches for use by visitors, employees, and Parks fleets. Parks and beaches selected to participate in the pilot will be determined by a PG&E and the California Department of Parks and Recreation collaborative selection process. PG&E will prioritize parks and beaches that are located near DACs, though no binding percentage target is provided. The utility will also partner with the selected parks to organize a ME&O campaign that seeks to improve awareness of

⁷ Level 2 chargers provide charging through a 240 V plug and can deliver 10-20 miles of range per hour of charging. More information can be found here: <https://www.energy.gov/eere/electricvehicles/vehicle-charging>.

⁸ DCFC provide a high-charging through 480 V AC input and can provide 60-80 miles of range in 20 minutes of charging. More information can be found here: <https://www.energy.gov/eere/electricvehicles/vehicle-charging>.

the benefits of EVs and educate potential EV owners of the ability of EVs to reach isolated parks with the hope of reducing “range-anxiety”⁹.

PG&E requests the Commission approve its proposal to set up a subaccount in the existing Transportation Electrification Balancing Account (TEBA) to forecast cost and revenue requirement of the pilot.¹⁰ The utility will determine the necessary annual rate increase by trueing-up the annual revenue balance in a Distribution Revenue Adjustment Mechanism (DRAM). PG&E estimates a 0.02% increase to the rate and bill impacts associated with the costs of the EV Charge Schools and *EV Charge Parks* pilot.¹¹

SCE (A.18-07-022)

SCE has requested a total of \$19.77 million, \$9.89 million for AB 1082 and \$9.88 million for AB 1083, over the two-year pilot program proposals.

For its AB 1082 proposal, SCE will install make-ready infrastructure at 40 Kindergarten-12 schools and up to 250 level 1 (L1)¹² and L2 charging ports, with priority given to schools located in or that serves residents of DACs. Each selected site will receive at least two charging ports that the school can make available to any light-duty EV vehicle owned by the school’s faculty, staff, student body, or visitor. The pilot also proposes to conduct on-campus ME&O events and presentations to explain the benefits of EV ownership to the next generation of drivers.

SCE’s AB 1083 proposal will install make-ready infrastructure at 27 state parks and beaches and up to 120 L2 charging ports, 10 DCFC, and 15 mobile EV charging ports, with each designated site receiving at least two charging ports and will be available to any light-duty EV vehicle owned by the park fleet, staff, or visitor. SCE will prioritize parks located in or near DACs, though the utility did not establish a binding minimum goal. The pilot also proposes to conduct multi-media outreach and in-park presentations to explain the benefits of EV ownership to drivers who enjoy outdoor activities, state park users, advocates, and employees.

⁹ Range-anxiety is the fear a driver has that their electric vehicle’s battery will run out of power before reaching the destination or an available charging station.

¹⁰ PG&E Testimony at 4-11

¹¹ PG&E Testimony at 4-12

¹² Level 1 chargers provide charging through a 120 V plug and can deliver 2-5 miles of range per hour of charging. More information can be found here: <https://www.energy.gov/eere/electricvehicles/vehicle-charging>.

SCE requests the Commission approve its proposal to establish two subaccounts, one for AB 1082 the other for AB 1083, in the existing Charge Ready Program Balancing Account (CRPBA), which is encompassed in the Transportation Electrification Portfolio Balancing Account (TEPBA), to record the monthly revenue requirements for the AB 1082 and AB 1083 pilots.¹³ The revenue requirements recorded in the CRPBA will be transferred to the distribution sub-account of the Base Revenue Requirement Balancing Account (BRRBA) at the end of each year. The CRPBA will be reviewed by the Commission in SCE's annual Energy Resource Recovery Account (ERRA) Review Application to ensure all account entries are stated correctly and consistent with the Commission's decision. SCE estimates that the current Commission approved rate of return of 7.61% is enough to recover the costs of the pilot.¹⁴ SCE estimates a \$0.0005/kWh, or 0.03% increase to the average SCE customer's rates as a result of the proposed pilots.

SDG&E (A.18-07-023)

SDG&E has requested a total of \$18.7 million over two years, \$9.9 million for AB 1082 (*School Pilot*) and \$9.8 million for AB 1083 (*Parks Pilot*).

Through the *Schools Pilot*, SDG&E expects to install a total of 196 EV charging stations, 184 L2 and 12 DCFC, across 30 school facilities and educational institutions, 25 percent of which will be located in DACs. Participating schools are given the option to allow charging stations access to the school's staff and faculty, students, visitors, and/or the general public. The utility will also partner with the participating schools to conduct a ME&O campaign through multiple media outlets and on campus presentations.

SDG&E's *Parks Pilot* proposes to install a total of 140 EV charging stations, 120 L2 chargers and 20 DCFC, across 12 state parks and beaches and 10 San Diego city and county parks and beaches. If the Commission approves its proposal to install charging infrastructure at city and county parks and beaches, SDG&E plans to site 100 percent of the charging stations installed under that portion of the pilot in DACs. The charging stations at parks and beaches could be used by the parks fleet, employees, visitors, and the general public. The utility will also partner with the participating parks to conduct a ME&O campaign through multiple media outlets and on-site presentations.

¹³ SCE Testimony at 54-55

¹⁴ SCE Testimony at 71

SDG&E estimates the pilot programs will achieve a lifetime emission reduction of 13,587 megatons (MT) of CO₂, 5,864 MT CO₂ reduction for *School Pilot* and 7,724 MT CO₂ for *Parks Pilot*.¹⁵

SDG&E requests authority to establish a one-way Light-Duty Balancing Account (LDBA) to record the authorized revenue requirements and costs associated with the proposed pilot. Two subaccounts will be created in the LDBA, one for the *Schools Pilot*, and the other for *Parks Pilot*, which will also include city & county parks and beaches.¹⁶ SDG&E proposes to combine the 2019, 2020 and 2021 revenue requirements and begin the recovery of the revenue requirement in 2021, which coincides with SDG&E's January 1, 2021 rate change. SDG&E proposes to recover all ongoing costs associated with the School and Parks Pilots in a future General Rate Case.¹⁷ SDG&E estimates the *Schools Pilot* and *Parks Pilot* proposals will increase the typical residential customers¹⁸ bill by 0.10%, or \$1.60 per year.

Liberty (A.18-07-025)

Liberty Utilities has requested \$4.602 million, \$3.861 million for AB 1082 and \$0.741 million for AB 1083, over two years.

In its AB 1082 pilot program proposal, Liberty proposes to install a total of 28 L2 chargers, with two ports each, and two DCFC across 17 Kindergarten-12 schools, Lake Tahoe Community College, and a bus barn operated by Lake Tahoe Unified School District. Liberty doesn't have any CalEnviroScreen¹⁹ defined DACs within their service territory. To meet the intentions of AB 1082, Liberty will install electric vehicle charging stations at all schools within the Lake Tahoe Unified School District since over 60% of the district's students are enrolled in a free and reduced cost lunch program.

In its AB 1083 pilot program proposal, Liberty proposes to install a total of five L2 chargers, with two ports each at three locations: Lake Tahoe Golf Course at Washoe Meadows State Park, Sugar Pine State Park, and Kings Beach State Park.

¹⁵ SDG&E Testimony at TR-4

¹⁶ SDG&E Testimony at NGJ-1

¹⁷ SDG&E Testimony at KCG - 2

¹⁸ The typical residential customer is defined as consuming 500 kWh per month.

¹⁹ <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-version-20>

Liberty also proposes to conduct a ME&O campaign through both pilots to provide clarifying information to address frequent questions and concerns about EV ownership. Liberty requests the Commission approve its proposal to establish a Transportation Electrification Balancing Account (TEBA) subaccount to separately record the incremental revenue requirements of AB 1082 and AB 1083.²⁰ The utility continues to seek an appropriate method to recover the TEBA balance. Liberty estimates that the proposed pilot will result in an approximately 1.1% increase to overall rates.²¹

2. Discussion of Proposed Pilot Projects

Under the guidance included in the ACR, the proposed pilot projects are limited to a duration of no more than two years and the costs shall not exceed \$10 million for each proposed pilot project. Both, AB 1082 and AB 1083 required the pilots adhere to the following guidelines:

- Have a cost recovery mechanism that allows for cost recovery up to a Commission-defined limit;
- Minimize costs and maximize benefits;
- Do not unfairly compete with nonutility enterprises;
- Include performance accountability measures;
- Are in the interest of ratepayers;
- Use workers paid the prevailing wage or employed by the utility to install charging stations;
- Require the site hosts to participate in a time-variant electric rate for the charging stations; and
- Prioritize sites located in DACs
- ME&O curriculum

²⁰ Liberty Testimony at 10

²¹ Liberty Testimony at 10

At the guidance of the ACR, the applications were to explain how the proposed pilots met the requirements established in AB 1082 and AB 1083, specifically:

- How the proposal(s) fit within the utility's broader transportation electrification plans and portfolios.
- An exhaustive summary of the proposed pilot program.
- The necessary equipment and ownership model for the electric vehicle charging equipment.
- The proposed method for recovery of the pilot's capital costs and expenses.
- An explanation for how the utility will ensure the installed charging infrastructure will be used and how it will remain useful.
- The strategy to ensure the pilot benefits DACs.
- A description for how the utility plans to engage stakeholders and identify potential charging infrastructure sites.
- The proposed plan to gather, report, and evaluate data collected through the duration of the pilot.
- The electric rates that can apply to the potential pilot sites, the pilots estimated load impact, and what additional requirements the site hosts will need to manage charging loads.
- An explanation for how the utility will ensure private market competition.
- How the utility will leverage funding to support the pilot and an outside organization that will provide guidance or expertise during the pilot planning and implementation phases.
- The utilities plan to ensure worker, customer, electric grid, and driver safety.

The ACR suggested the three large utilities (PG&E, SCE, and SDG&E) review their proposals with their Program Advisory Council (PAC) or Advisory Board for their light-duty infrastructure pilot before they submit their application. All of the interested utilities were to consult with the California Department of Education prior to submitting their application for AB 1082. The utilities were required to consult with the California Department of Parks and Recreation (Parks) , California Public Utilities Commission (Commission), California

Energy Commission (CEC), and the California Air Resources Board (ARB) prior to the submittal of their AB 1083 application.

The Scoping Memo will have identified the following issues as within the scope of this proceeding:

1. Do the proposed programs meet the AB 1082/1083, Senate Bill (SB) 350, and requirements for Transportation Electrification from the September 14, 2016 Assigned Commissioner Ruling?²² Should the proposed programs be modified in any way to comply with these requirements?
 - a. How do the AB 1082/1083 proposals support widespread Transportation Electrification and align with California's zero emission vehicles initiatives and the state's greenhouse gas emissions reduction target?
 - b. Do the AB 1082/1083 applications meet the statutory requirements adopted in Chapters 637 and 638 of the Statutes of 2017?
 - c. What cost recovery mechanism (e.g., future cost recovery in general rate cases; treating rebates as a capital addition; balancing account; advice letter tier) should be adopted for the AB 1082/1083 programs?
 - d. What types of performance accountability measures should the AB 1082/1083 programs have?
 - e. Are the proposed AB 1082/1083 programs reasonable and in the ratepayers' interests? (See Public Utilities Code § 740.3 and 740.8)
 - i. Are the proposed programs an appropriate use of ratepayer funds?
 - ii. Do the proposed programs equitably benefit ratepayers on a whole, and not just those participating customers?
 - iii. What specific ratepayer benefits will result from Charge Ready 2? (See Pub. Util. Code § 740.8.)
2. Do the AB 1082/1083 programs consider rate design issues including. For example, demand charges, time of use (TOU), vehicle-to-grid integration (VGI), effective load management, and the Commission's Distributed Energy Resources Action Plan?
3. Do the AB 1082/1083 programs leverage funding by other sources?
4. Do the AB 1082/1083 programs address the safety concerns set forth in Public Utilities Code § 740.8(a) and § 740.12(b)?
5. What data gathering, reporting, and evaluation requirements should be imposed?
6. Do the AB 1082/1083 programs adequately address low-income communities and moderate-income communities? (See SB 350 and SB 1275 Charge Ahead California)

²² See R.13-11-007 docket.

7. Is proposed utility ownership of the charging infrastructure necessary to carry out the objectives of AB 1083/1083?
8. Do the proposed programs utilize similar customer payment standards for customers to utilize across service territories?

To focus the discussion at the workshop, participants should review these broader scoping questions along with the more specific issues identified below for each separate pilot program proposal.

1. Workshop Questions

Energy Division proposes the following workshop discussion questions related to the four IOU's AB 1082 and AB 1083 pilot program proposals:

1. For AB 1082, the utilities propose either utility-ownership of the EVSE, or two EVSE ownership models, one being utility ownership, the other site-host ownership.
 - a. For the two utilities that offer two ownership options, how many schools are expected to choose utility ownership? How many site-host ownership?
 - b. Are these two options designed to give the site-host a balanced and competitive choice?
 - c. For the two utilities that only offer utility ownership, how does the AB 1082 pilot benefit from the absence of an additional ownership model?
 - d. Without a non-utility ownership model, how does the application ensure fair competition as required by AB 1082 and the ACR?
2. How many electric vehicles will the pilot support? What are the projected incremental electric vehicles to be supported each year?
3. What is the pilot's expected load impacts? What, if any, charging load management requirements are put on the site-hosts?
4. All four utilities propose installing DCFC in their AB 1082 or AB 1083 proposals.
 - a. Is it appropriate to include DCFCs at schools or state parks and beaches? Will the siting of DCFC cause load management issues?
 - b. Will the inclusion of DCFCs attract non-school or non-park-going visitors and create a bottleneck?

5. All four utilities AB 1083 pilot proposal includes a single ownership model - utility ownership of all EVSE. They reason that the language of AB 1083 justifies the single ownership option.
 - a. Is this a valid interpretation of AB 1083? Did the utilities consider any options to provide non-utility ownership to the Parks?
6. The utilities proposals allow the site host to implement custom pricing options.
 - a. Will these custom prices potentially hide the full cost of charging to the driver?
 - b. How will the utilities work with the site-hosts to ensure an efficient grid management?
7. What time-variant electric rates are available to the site-hosts?
8. The utilities state they will prioritize schools and parks located in or near DACs. How do they define 'near' and what is the minimum target of sites located in or near a DAC?
9. Does the AB 1082 pilot allow a participating school to participate in future EV pilot programs, as required in §740.13(i) of the Public Utility Code?
10. How does the utility expect to cooperate with CCAs? How will the EVSE ownership models adjust to schools located and enrolled in CCA's?
11. How does the utility expect to guarantee accuracy of the reported data? What steps are in place to evaluate the data? What are the established thresholds to determine the pilot's success?
12. What are the minimum performance accountability measures to justify an EV charger's location and maintenance throughout the pilot. How will the performance accountability measures influence the siting of future chargers during the pilot's duration?
13. The proposed site designs are specific to certain drivers (school/park fleets, employees, visitors). Does this limit the pilot's ability to accelerate wide-spread EV adoption? How could the lessons learned from these specific applications translate to other sectors?
14. What are the estimated quantifiable greenhouse gas (GHG) emission reduction and air quality improvements to be achieved by the pilot?

15. How do the proposed pilots ensure year-round access to the chargers? What steps are in place to minimize the risk of stranded assets?
16. How do the proposed pilots incorporate recommendations made in the Energy Division's VGI Staff Report?
17. Is the pilot in the interest of ratepayers? If not, how can it be modified to be in the interest of ratepayers?

2. PG&E EV Schools Pilot Program Proposal (\$5.76 million)

PG&E's proposal for AB 1082, *EV Charge Schools*, requests \$5.76 million to create a pilot program that addresses the lack of EV charging awareness and infrastructure at educational facilities and institutions. The application is divided into two sections, one section to site and installed necessary EV infrastructure, and the other to design and implement a ME&O campaign to spread awareness of the benefits to own an EV to students, parents, and any other interested party.

PG&E seeks \$4.66 million to fund the capital and expense costs associated with the infrastructure rollout section. The funds will go towards the installation of 88-132 L2 EV charging ports across 22 schools located in Alameda, Fresno, and San Joaquin counties. Each of the selected schools will receive 4-6 charging ports.

PG&E will own, operate, and maintain the EV Service Connection and the EV Supply Infrastructure up to the charger at all locations. PG&E gives the participating school two options for the ownership of the EV charger and associated network.

1. **Site Host Ownership with Rebate:** the school can choose to own the charger and will be responsible to procure the infrastructure from a list of approved charging providers.²³ The school will need to install the charging equipment and will be responsible for the maintenance and operation of the equipment for a 10-year period, with the option to remove the charger after 8-years. To reduce the up-front costs for the equipment, PG&E will provide a per-charger rebate equal to the base cost of a L2 charger, which is equal to the rebate offered to MUDs in DACs that participate in the EVCN program.
2. **PG&E Ownership with Participation Payment:** The school can opt for PG&E to ownership, which will put the responsibility for procurement, installation, maintenance, and operation onto PG&E. The school will incur a per-charger participation charge that

²³ Qualified charging providers will match the providers approved for the EVCN program.

is equal to the difference between the cost of their selected charger less the base cost of the EV charger, calculated by PG&E.

PG&E's proposal seeks to target the deployment of EV charging stations across areas that have a high concentration of DACs. To achieve this, PG&E has prioritized schools located within the jurisdiction of the Alameda County Office of Education, the Fresno County Office of Education, and the San Joaquin Office of Education, which represent a combined 65 school districts. PG&E selected these three counties since they are three of the top five counties in the utilities service territory in terms of high percentage of population living in DACs. Ultimately, at least 35% of the selected schools will be located within a DAC. PG&E will also cap the number of public higher education campuses that participate in the pilot at 10% of charging sites, since it is believed a focus towards elementary and high school students will have the most impact when it comes to EV awareness, perceptions, and adoption.

The pilot's ME&O section seeks \$833,000 to achieve a minimum awareness and understanding of the benefits to EV ownership among the school faculty and staff, parents, students, and the community in order to facilitate a growth in EV adoption. PG&E will utilize informative signage on the school campuses to provide information about EV charging and how it benefits the environment. Additionally, PG&E will aid in community-scale events at the participating schools to raise awareness of the pilot and the benefits that it seeks to achieve. Finally, PG&E will design an education curriculum, based on existing material developed for the PG&E administered *Energenius Program*, to increase awareness and further educate students about EVs.

PG&E will require every charger installed under the pilot to be separately metered and charged on the appropriate commercial TOU rates. PG&E will also utilize the same rate plans offered under the Electric Vehicle Charge Network (EVCN) program. Participating schools, or the account on record, will have the option to enroll in Schedule A-6 or A-10 TOU rate plans. PG&E wants to use the available rates to encourage charging during off-peak hours to stimulate more efficient integration into the utility grid. Each participating school will have the choice of two pricing options

1. Pass-Through Pricing – where the school will pass the TOU rate directly to the drivers.
2. Custom Pricing – where the school has the option to create their own pricing structure (free charging, flat-rate charging). This will allow the school to design a pricing structure that can encourage more charger utilization, or more efficient grid management. If this option is selected, the school will need to implement a Load Management Plan.

3. **PG&E *EV Parks* Pilot Program Proposal (\$5.54 million)**

PG&E's *EV Charge Parks* proposes to spend \$5.54 million to install electric vehicle charging stations for use by state park and beach employees and visitors. The application is divided into two sections, one that seeks to address the lack of EV charging infrastructure in state parks and beaches, and the other to design and implement a ME&O campaign to spread awareness of the benefits of EV ownership and to address the concerns of "range-anxiety."

PG&E expects to deploy the *EV Charge Parks* pilot over two years, followed by three years of maintenance and support. The proposed pilot will install a total of at least 40 L2 and three DCFC charging stations at 15 state parks and beaches. Parks located near DACs will be prioritized, though no goal has been provided.

PG&E states that its proposal is designed to test different types site designs and charging station placements:

- Five sites will have four L2 charging ports each to be used by park and beach fleet vehicles only. To make future EV charger installation easier, PG&E will lay conduit and build addition electric capacity for up to 10 ports at each site.
- Three sites with four L2 charging ports each to be used by park visitors only.
- Two sites with two L2 charger ports and one DCFC each to be used by park visitors only.
- Four sites with one off-grid L2 charger port each to be used by visitors only.
- One site with one off-grid DCFC to be used by visitors only.

PG&E will own, operate, and maintain the EV Service Connection, EV Supply Infrastructure, and the EV charger at all on-grid and off-grid locations, in addition to any off-grid charging equipment. This ownership model is proposed to ensure that the California Department of Parks and Recreation does not incur any costs or liabilities related to the installation, use, or maintenance of the charging stations, as required by AB 1083.

PG&E designed unique rate and pricing options for the different types of charging stations installed during the pilot.

- Grid-connected fleet charging – All grid-connected chargers intended for fleet vehicle use will be separately metered and be charged the appropriate commercial TOU rates, with the hosting park or beach as the customer of record. The TOU rates will be used as price signals to encourage charging on off-peak hours.

- Grid-connected visitor charging – Grid connected chargers intended for visitor use will be separately metered and charged the appropriate commercial TOU rates. PG&E will contract with a third party to operate the charging equipment, and to serve as the customer of record. The third party will pay the electricity costs associated with the charger and can collect revenue from the station users, by passing the TOU rate directly to drivers with an adder to compensate the third party for its services. PG&E intends to establish this same policy for off-grid chargers but given the lack of network accessibility to some remote locations, PG&E recognizes drivers may not be charged for their use of the off-grid stations.

The *EV Charge Parks* Pilot's ME&O section seeks \$932,000 to raise the awareness about the benefits to EV ownership to state park and beach employees, fleet operators, and visitors. PG&E will install on-site signage to illustrate the ease of charging an EV, the environmental benefits of EVs and how adopting EVs helps achieve the mission of the California Department of Parks and Recreation.²⁴ PG&E will also sponsor events open to all park visitors to promote the availability of charging stations and general information about EV ownership. PG&E will work with the California State Parks Foundation to hold volunteer events at the state parks to promote EV ownership and conduct a broader media campaign to address "range-anxiety."

4. SCE AB 1082 Pilot Program Proposal (\$9.89 million)

SCE seeks \$8.7 million to fund the capital and expense costs associated with the infrastructure rollout section. The funds will go towards the installation of make-ready infrastructure and up to 250 L1 and L2 EV charging ports across 40 K-12 schools. Each of the selected schools will receive at least 1-2 charging ports. SCE's proposal seeks to target the deployment of EV charging stations across areas that have a high traffic volume, with a priority of locations to be sited in or near DACs.

SCE will own, operate, and maintain the EV service connection and the EV supply infrastructure up to the charger at all locations. SCE will offer participating schools two options:

1. Site Host Ownership with Rebate: the school can choose to own the charger and will be responsible for procuring the charging stations from a list of approved vendors.²⁵ The school would select and install the charging equipment and be responsible for the maintenance and operation of the equipment for a 10-year period, with the

²⁴ California Department of Parks and Recreation's mission is as follows "To provide for the health, inspiration and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation"

²⁵ Qualified charging providers will match the providers approved for the EVCN program.

option to remove the charger after eight years. To reduce the up-front costs for the equipment, SCE will provide a rebate of up to \$2,000 per charger port, not to exceed 100 percent of the total cost of the charging station and installation.

2. SCE Ownership with Participation Payment: the school can opt for SCE ownership, which will put the responsibility for procurement, installation, maintenance, and operation onto SCE. The school will incur a per-charger participation charge that is equal to the difference between the cost of their selected charger less the base cost of the EV charger, calculated by SCE. Under this option, the school would also still be responsible for all electricity costs.

SCE will require every charger installed under the pilot to be separately metered, charged on the appropriate commercial TOU rates, and participate in a demand response (DR) program. SCE encourages the site-host to pass the TOU rates directly to the driver but will allow the school to implement their own pricing plans.

SCE also proposes to spend \$1.21 million on ME&O to increase awareness of the benefits of EV ownership among the school faculty and staff, parents, students, and the neighboring community. SCE will install signage on the school campuses to provide information about EV charging and how it benefits the environment and help host community-scale events at the participating schools to raise awareness of the pilot and the benefits that it seeks to achieve.

Discussion Questions

Energy Division proposes the following workshop discussion questions related to the SCE AB 1082 pilot proposal:

1. SCE proposal includes funding to site level 1 (L1) chargers at participating schools. What reasoning was used to include this technology in the program? How does SCE proposed to ensure this lower-charge rate technology does not become obsolete during the pilot period?
2. SCE's proposal includes a \$2,000 per charge port incentive to schools that choose the site-host ownership model.
 - a. How did SCE determine the \$2,000 rebate value?
 - b. Will the site-host have the ability to use third-party incentive funds to further reduce the charger cost?
 - c. How will SCE ensure the site-host's incentives do not cover more than 100 percent of the charger costs?

5. SCE AB 1083 Pilot Program Proposal (\$9.88 million)

SCE's AB 1083 *pilot* requests \$9.88 million to increase the rate of electrification of vehicles owned by California Department of Parks and Recreation fleets, employees, and visitors through the installation of EV charging stations and a program to increase EV charging awareness.

SCE's \$9.88 million request includes \$7.9 million for infrastructure expenditures and \$1.99 million in ME&O costs for the two-year deployment, maintenance and support of the AB 1083 pilot. SCE estimated this cost through the assumption of similar installation costs to the *Charge Ready Pilot* costs²⁶. The *Charge Ready Pilot* provided information to base the utility-side and customer-side costs associated with the rollout of installing the make-ready infrastructure and the EVSE.

SCE will collaborate with the California Department of Parks and Recreation to determine priority sites to install the charging infrastructure. SCE intends to consider parks visitorship numbers; the number of DAC residents served by the site; the proximity to existing transit corridors where there is minimal existing or planned charging infrastructure; and the site's access to the appropriate electrical infrastructure or appropriateness for an off-grid solution. SCE will work with the specific parks to plan for future site growth and install hardware with additional capacity and infrastructure to accommodate future charging stations.

SCE will own, operate, and maintain the EV service connection, EV supply infrastructure, and the EV charger at all sites participating in its AB 1083 pilot. This ownership model is proposed to ensure that the California Department of Parks and Recreation does not incur any costs or liabilities related to the installation, use, or maintenance of the charging stations, as required by AB 1083.

SCE will contract with a third-party EV charging service provider to serve as the customer of record for the EV chargers.

The third-party EV service provider will be required to take service on a commercial TOU rate which can be flexibly passed on to drivers using the charging stations. The utility will coordinate with each site to establish a reasonable charging rate for visitors, and all

²⁶ SCE filed their *Charge Ready and Market Education Program Application* in 2014 and approved in Commission Decision D.16-01-023. *Charge Ready* supports the deployment of 1,500 qualified L1 or L2 EV charging stations at non-residential locations where vehicles are typically parked for at least four hours. More information on the *Charge Ready* pilot program can be found here: https://www.sce.com/business/electric-cars/Charge-Ready?ecid=van_chargeready

charging stations installed to serve state fleets will be billed directly to the California Department of Parks and Recreation.

Discussion Questions

Energy Division proposes the following workshop discussion questions related to the SCE AB 1083 pilot proposal:

1. The pilot application does not specify the separate capital costs and the expenses. Are these separate costs available?

6. SDG&E Schools Pilot Program Proposal (\$9.88 million)

SDG&E's *Schools pilot* requests \$9.9 million to site and install EV infrastructure at school facilities and to design and implement a ME&O campaign on the benefits of EV ownership for students, parents, and community members. SDG&E estimates its pilot program could install up to 184 L2 EV charging stations across 30 schools and educational institutions, at least 25 percent of which will be located in DACs. If proven successful, SDG&E hopes to scale the pilot up to target the 1,000 schools and educational institutions within the utility's territory.

SDG&E will own, operate, and maintain all of the EV charging equipment installed at all school facilities participating in the program. SDG&E reasons that many public schools lack the funding and personnel to own, operate, and maintain the EVSE make utility ownership the best option for participating public schools, as was demonstrated in the *Power Your Drive (PYD)* program.²⁷ The San Diego Unified School District and the University of San Diego filed letters backing SDG&E's proposal, which voice support for the proposed utility-ownership models.

Each charger installed under the pilot would be separately metered and charged on the appropriate commercial TOU rates to encourage charging during off-peak hours.

The pilot's ME&O program would provide information about the availability and accessibility of the charging stations. SDG&E states that it will work with each school and educational institution to design a site-appropriate campaign and host a grand-opening event for each charging stations as they become available.

SDG&E estimates the *School* pilot will contribute towards a GHG emission reduction of 5,864 million metric tons of CO₂ over the life of the pilot.

²⁷ 10 of the 12 participating schools in the PYD program are public schools located in DACs. All 10 chose SDG&E ownership of the EVSE infrastructure. The other 2 schools were private schools, with funding available to invest in their own infrastructure. More information can be found in SDG&E Testimony at RLS-12.

7. SDG&E Parks Pilot Program Proposal (\$9.88 million)

SDG&E's *Parks Pilot* requests \$9.88 million to install electric vehicle charging stations for use at state and San Diego city and county parks and beaches. SDG&E seeks to spend up to \$3.6 million to install infrastructure at city- and county-owned parks to better serve DACs, as it only has one state park within a DAC in its service territory.

SDG&E states that to better meet the intent of AB 1083, which orders that priority be given to sites located in DACs, all city and county parks participating in the program will be located in or near DACs.

SDG&E estimates the *Parks* pilot will contribute towards a 3,734 MT million metric tons of CO2 reduction over the life of the pilots.

SDG&E will own, operate, and maintain the EV service connection, EV supply infrastructure, and the EV charger at all locations. The participating parks will need to provide the parking spaces, sign licensing agreements, and provide expertise to streamline the design, permitting and installation efforts. SDG&E states that its ownership of the charging equipment helps ensure the California Department of Parks and Recreation does not incur any costs or liabilities related to the installation, use, or maintenance of the charging stations, as required by AB 1083.²⁸

SDG&E will contract with a third-party EV charging service provider to serve as the customer of record for the EV charging stations, which will all be separately metered and billed on the appropriate commercial TOU rates to encourage charging during off-peak hours.

SDG&E proposes to work with each participating park and beach to design an appropriate ME&O campaign on the benefits of EV ownership. SDG&E will also hold a grand-opening event for each charging stations as they become available.

Discussion Questions

Energy Division proposes the following workshop discussion questions related to the SDG&E's Parks Pilot proposal:

1. Does the inclusion of San Diego city and county parks meet the intentions of AB 1083?
 - a. If not, how could SDG&E meet the intentions of AB 1083 with regards to prioritizing sites in DACs?

²⁸ Like public highways, state parks and beaches are public property and would require public funding to purchase the charging equipment.

8. Liberty Utilities AB 1082 Pilot Program Proposal (\$3.86 million)

Liberty requests \$3.86 million to install 28 L2 chargers – each with 2 ports – and two DCFCs across 15 Kindergarden-12 schools, the Lake Tahoe Community College, and a Lake Tahoe Unified School District (LTUSD) operated bus barn.

Liberty’s pilot seeks to encourage the school to allow public access to the chargers during the summer months. Liberty’s service territory does not have any DAC as defined by the California EPA’s CalEnviroScreen. However, 60 percent of the LTUSD’s students qualify for the free and reduced cost lunch program. Liberty states that the proposed pilot will install a charging station at every school within the Liberty service territory.

Liberty will own, operate, and maintain the EV service connection and the EV supply infrastructure including the charging stations at all locations. Liberty will issue a RFP to competitively procure the EVSE. Liberty will distribute the 28 L2 chargers as shown below:

- 1 dual pedestal L2 station with 2 ports at 13 K-12 schools
- 2 dual pedestal L2 stations with 2 charging ports at 2 K-12 schools.
- 2 dual pedestal L2 chargers with two charging ports and 2 DCFC at Lake Tahoe Community College
- 8 dual wall-mounted L2 charging stations with a total of 16 charging ports for electric school bus charging at the LTUSD-operated bus barn

Discussion Questions

Energy Division proposes the following workshop discussion questions related to the Liberty’s AB 1082 Pilot proposal:

1. Will Liberty require participating customers to enroll in an EV specific TOU rate, or another existing time-variant rate? If not, how will efficient site load management be encouraged?
2. Is a competitive RFP adequate to ensure fair competition as required by AB 1082 and the ACR?
3. Liberty does not have any DACs as defined by CalEnviroScreen and instead proposes to site chargers at all schools within the Lake Tahoe Unified School District since 60 percent of the school district’s student body receives free or reduced lunch.
 - a. Is this an appropriate substitute to serving DACs?

- b. Should Liberty include any other metrics to ensure it is targeting the schools with the highest percentage of students receiving free/reduced lunch?

9. Liberty Utilities AB 1083 Pilot Program Proposal (\$0.74 million)

Liberty requests \$0.74 million to install five L2 chargers – each with two ports – at three state parks and beaches : Lake Tahoe Golf Course at Washoe Meadows State Park, Sugar Pine State Park, and Kings Beach State Park. The chargers at all three locations will be limited to serve park visitors, while the chargers sited at Sugar Pine State Park will be open to serve the community, employees, and park fleets.

Liberty will own, operate, and maintain the EV service infrastructure, including the charging stations, at all locations participating in its AB 1083 pilot. Liberty will issue a RFP to competitively procure the EVSE.

Discussion Questions

Energy Division proposes the following workshop discussion questions related to the Liberty’s AB 1083 Pilot proposal:

1. Will the charging stations be billed through an EV-specific or other TOU rate? If not, how will efficient site load management be encouraged?
2. Is a competitive RFP enough to ensure fair competition as required by AB 1083 and the ACR?
3. How will the pilot distribute the chargers across the three proposed parks?
4. How will does this application address DACs?